## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

## 4-S02-ENV-OPS-FO.04 REVISION 3

# DECONTAMINATION OF EQUIPMENT AT DECONTAMINATION FACILITIES

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APPROVED BY:	S. J. Myrick Form.c Operations Manager,	Orousseld Jusan L. 11/41	rick 3/28/75
		Print Name	Date
	Environmental Operations Management		
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	Quality Assurance Program Manager,	Print Name	Date
	Data Management and Reporting Services		
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Data Management and I	Reporting Services	Group 1 Closures	
Environmental Operation		Oprerable Unit 2 Closure	
Radiological Health and		Oprerable Units 5, 6, and 7 Clo	osures
Industrial Hygiene		Industrial Area OU Closures/D	&D Team
Occupational Safety		Solar Ponds Project	
	USE CATEGORY	<b>7 4</b>	
ORC review not require	d		
The following have bee 95-DMR-000012	n incorporated in this revision:	DOCUMENT CLASSI REVIEW WAIVE	R PER

Background information: No Site procedure exists that will fulfill the requirements of this document. Good management practice requires proper methods for decontamination of field equipment at Rocky Flats decontamination facilities.

This procedure supersedes procedure 5-21000-OPS-FO.4, Revision 2

Periodic review frequency: 1 year from effective date

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#### 1. PURPOSE

This procedure describes the process used in the decontamination of all field equipment at a Rocky Flats Environmental Technology Site (Site) Decontamination Facility (DF).

This procedure implements the requirements of the Health and Safety Practices Manual and of RFP-ER-MP-QAPD, RFP Environmental Restoration Management Quality Assurance Program Description, Section 5.0, Work Processes.

#### 2. SCOPE

This procedure applies to all Site employees and subcontractors who conduct operations as part of the Environmental Restoration Program Division (ERPD) program, specifically to personnel who:

- Operate heavy and general equipment.
- Handle environmental materials containers (drums).
- Handle environmental liquids.
- Perform decontamination operations.

This procedure addresses maintaining and operating the DF.

This revision is a total rewrite and revision bars are omitted.

This revision supersedes 5-21000-OPS-FO.4, Revision 2.

#### 3. OVERVIEW

Effective decontamination procedures are required to minimize the potential for cross-contamination, offsite contaminant migration, and personnel exposure from improperly decontaminated equipment. Heavy equipment, environmental materials containers, and environmental liquids may become contaminated when used in a work area characterized as:

- Potentially contaminated such as an Individual Hazardous Substance Site (IHSS).
- <u>Not</u> potentially contaminated but where field monitoring conducted during field activities indicates the possible presence of contamination.

Because contamination is not always easily discernible, it is assumed that equipment used in either of the two preceding ways has been contaminated and will require decontamination.

A main and a protected area DF exists at the Site, as shown in Appendix 1, Decontamination Facility Locations. A DF consists of three functional areas: the equipment decontamination pad, the environmental liquid management area, and the drum transfer area, and are shown in Appendix 2, Typical Decontamination Facility Layout.

Additional equipment-specific decontamination guidance is available in the following procedures:

• 4-S01-ENV-OPS-FO.03, Field Decontamination Operations

## 3. OVERVIEW (continued)

- 5-21000-OPS-FO.6, Handling of Personal Protective Equipment
- 5-21000-OPS-FO.7, Handling of Decontamination Water and Wash Water
- 5-21000-OPS-FO.8, Handling of Drilling Fluids and Cuttings
- 5-21000-OPS-FO.10, Receiving, Labeling, and Handling Environmental Materials Containers
- 5-21000-OPS-FO.12, Decontamination Facility Operations

## 3.1 Decontamination Pad Equipment

The decontamination pad equipment includes a curtain system, a sump for collection of environmental liquids and sediments, and a pumping system for moving liquids from the sump to the environmental liquids management area.

The DF uses a concrete pad for cleaning large equipment. The entrance and exit are sloped and curbed to contain and collect environmental liquids, solids, and sludge generated during cleaning operations. The approaches to the pad are sloped to allow equipment to be driven onto and off of the facility. A sump is located in the pad to collect waste materials.

The DF operation typically uses electric or gasoline-powered pumps and high pressure steam cleaners for day-to-day activities. A typical pump setup is shown in Appendix 2.

#### 4. **DEFINITIONS**

**Decontamination Facility (DF)**. As used in the context of environmental materials management at the Site, a fixed facility that generally includes a paved and bermed area equipped with sumps, pumps, and pressurized sprays used to decontaminate large items that cannot be conveniently decontaminated in a relatively uncontrolled environment. The terminology DF should not be interpreted to refer to any specific Site DF.

<u>Decontamination Facility User (DFU)</u>. Site personnel and Subcontractors who use the facility to decontaminate equipment.

<u>Designated Subcontractor (DSC)</u>. The Subcontractor responsible for the day to day operation the DF.

Individual Hazardous Substance Sites (IHSSs). Individual locations where hazardous substances are located at a discrete area within the Site.

Operable Unit (OU). IHSSs combined into a single management area as defined in the Rocky Flats Interagency Agreement.

<u>Sump</u>. The initial collection area for sediments and decontamination liquids generated at the DF.

## 5. RESPONSIBILITIES

## 5.1 **DFU** (functional title)

Ensures that predecontamination surveys are completed in accordance with (IAW) the following:

- 3-21000-OPS-EMRG-1.1, Gamma Radiation Surveys
- 4-B96-ER-OPS-EMRG-03.02, Survey Requirements for Conditional and Unrestricted Use

Ensures that field operation forms are completed IAW 5-21000-OPS-FO.12 prior to entering the DF.

Reviews the Decontamination Facility Health and Safety Plan (DF HASP) for personal protection equipment (PPE) and training requirements.

Coordinates with the Designated Subcontractor (DSC) for the efficient use of the DF.

Conducts decontamination of respective equipment and verifies the decontamination effectiveness.

## 5.2 DSC Decon Facility Personnel (functional title)

Provides general use equipment at the DF.

Performs routine maintenance and minor repairs to the DF and equipment used at the facilities.

Manages environmental liquids and residual sediments brought to the DF IAW 1-10000-HWR, RFP Hazardous Waste Requirements Manual.

Conducts decontamination on equipment and materials as directed by the ERPD Project Manager.

#### 5.3 DSC Site Manager

Coordinates with the DFUs for the efficient use of the DF.

Ensures that proper documentation of environmental liquids and sediment transferrals is maintained.

Inspects decontamination operations for safety, environmental compliance, and operations.

## 5.4 ERPD Environmental Operations Management (EOM) Project Manager

Ensures implementation of this procedure.

Provides appropriate equipment to the subcontractor.

Supervises the DSC in the operation and maintenance of the DF.

## 5.5 Health and Safety Specialist (HSS) DSC

Performs DF inspections, as requested.

Ensures that all DF operations are performed safely and in accordance with the DF HASP.

Conducts weekly radiological surveys at the DF IAW 3-21000-OPS-EMRG-1.1, Gamma Radiation Surveys, and 4-B96-ER-OPS-EMRG-03.02, Survey Requirements for Conditional and Unrestricted Use.

Reviews DFU surveys and form FO.04-A3, Equipment Decontamination/Wash Checklist and Record, (as shown in Appendix 3) to ensure survey results are below release limits IAW 4-B96-ER-OPS-EMRG-03.02 prior to vehicles arriving at Main DF.

#### 5.6 HSS DFU

Performs radiological survey on equipment before equipment is brought to DF IAW 3-21000-OPS-EMRG-1.1 and 4-B96-ER-OPS-EMRG-03.02.

Ensures DFUs perform operations safely and in accordance with the DF HASP.

Ensures that personnel have completed the required DF training and that copies of the individuals following certificates are transferred to the DSC:

- Radiation Worker II
- General Educational Training
- 40 Hour OSHA

#### 6. TRAINING

## **ERPD EOM Project Manager and DFU**

- [1] Ensure that all personnel, including subcontractors, are trained and qualified to perform the duties, tasks, and responsibilities described in this procedure and that the training and qualification is documented.
- [2] Ensure that all core and DF-specific and ERPD-specific training has been completed and documented, and that copies of all documentation have been forwarded to the ERPD training files.

## 7. MATERIALS AND EQUIPMENT

#### 7.1 Maintenance and Test Equipment

#### **DSC Decon Facility Personnel**

- [1] Ensure that the following equipment, with current calibration labels (stickers), is available for use at the DF:
  - An organic vapor detector (OVD)
  - Radiologic detectors [such as Bicron Frisk A-100 (α), Ludlum Model 31 with
     44-9 Probe (β/γ), and a Ludlum 2929 removable (α, β/γ) or equivalent] to screen equipment and environmental materials containers

## 7.2 Special Tools and Equipment

#### **DSC Decon Facility Personnel**

- [1] Ensure that the following equipment is available for use at the DF:
  - Sumps and tanks for the collection and holding of environmental liquids and sediments
  - One or more moveable tanks for containing RFP clean water for use during decontamination
  - Hoses (1-in., 2-in., and 3-in. diameter) to convey environmental liquids to and from the various sumps, pumps, and tanks on a temporary basis
  - High pressure steam cleaner with high pressure wash and rinse systems
  - A two-wheeled dolly designed to carry 55-gal drums
  - Long- and short-handled stiff bristle brushes
  - Wire brushes
  - Wash and rinse buckets for decontaminating equipment interiors
  - Anemometer and windsock to allow decontamination workers to determine the wind speed and direction
  - Wash and rinse buckets to decontaminate DFU boots

## **DFU**

- [2] Provide the following equipment and supplies for use at the DF:
  - PPE as required by the DF HASP
  - Environmental materials containers (obtained from the Site Contractor) for nonreusable items required to remove soil dislodged during decontamination
  - Wash and rinse buckets necessary to clean small items
  - Brushes

## 7.3 Disposables

## **DSC Decon Facility Personnel**

[1] Ensure that premoistened towelettes and Kimwipes® are available for use at the DF.

#### 8. INSTRUCTIONS—MAINTAINING AND OPERATING THE DF

This section is organized topically rather than sequentially to correspond to the various operational tasks associated with the operation of the DF.

## 8.1 Planning and Coordination

#### **DSC Site Manager**

- [1] Ensure that DF operations are planned in accordance with the DF HASP.
- [2] Ensure that all DFU and DSC Decon Facility personnel have reviewed the DF HASP to determine the appropriate PPE to use during the various DF operations.
- [3] Maintain a roster of DFUs and a point of contact to receive information regarding the operation of the DF.
- [4] Establish a priority of use for the DF as follows:
  - Radiological Engineer Designated Contaminated Equipment
  - Standby Drillers
  - Scheduled DFUs
  - All other DFUs
- [5] Schedule foreseeable periods of downtime and notify other subcontractors of both scheduled and unscheduled periods of downtime.
- [6] Coordinate with the DFUs and ERPD EOM Project Manager at the weekly Plan of the Day (POD) meeting.

#### DFU

- [7] Coordinate with DSC on an as-need basis, such as on items <u>not</u> scheduled during the POD meeting.
- [8] Review the DF HASP to determine the appropriate PPE to use during the various DF operations.

#### **DFU HSS**

- [9] Perform a Radiological survey on equipment and complete Form EMRG 1.1B, Contamination Survey Form.
- [10] Submit completed Form EMRG 1.1B to DSC HSS for review.

#### **DSC HSS**

[11] Ensure that the information on Form EMRG 1.1B is below release limits, OR establish the area as a Radiation Controlled Area (RCA) prior to commencing of decontamination.

#### 8.2 Routine Maintenance of the DF

#### **DSC Decon Facility Personnel**

- [1] Fill the clean water tank to supply liquids for decontamination.
- [2] Use the high pressure steam cleaner to de-ice the DF, as necessary.
- [3] Drain and winterize all the equipment that could be damaged as a result of freezing fluids, as necessary.
- [4] WHEN the containers at the DF are full of waste PPE, THEN dispose of the waste PPE in accordance with 5-21000-OPS-FO.6.

#### 8.3 Decontamination Operations at the DF

All decontamination operations at the DF are conducted in accordance with this procedure and 5-21000-OPS-FO.12. The DFUs are responsible for the decontamination of their respective equipment. DSC Decon Facility personnel are responsible for the decontamination of Site equipment.

#### WARNING

Failure to wear all PPE as directed in the DF HASP may result in injury due to burn, punctures, falls, or contamination.

#### DSC Decon Pad Personnel and DFU

[1] Don PPE, as required per the DF HASP, Section 7.

#### WARNING

Failure to cease all decontamination operations during a wind alarm, in accordance with 5-21000-OPS-FO.01, Air Monitoring and Dust Control could result in the release of contaminants into the surrounding area.

- [2] Observe all of the health and safety requirements posted at the DF and presented in the DF HASP.
- [3] Wear 16-in. rubber boots when entering the concrete pad area.

#### 8.3 Decontamination Operations at the DF (continued)

DSC Decon Facility Personnel and DFU (continued)

#### WARNING

Failure to go through the boot bath when exiting the concrete pad area could result in the contamination of the surrounding area.

- [4] IF necessary to exit the concrete pad area for any reason, THEN exit through the boot bath.
- [5] Close chains on east and west sides of concrete pad after vehicle or item to be decontaminated is placed on the pad.

#### WARNING

Misuse of or positioning the steam cleaner high pressure wand at any body parts could result in burns.

- [6] IF the high pressure steam cleaner is to be used, THEN close the splash curtains.
- [7] IF the planned decontamination activities are likely to cause the sump to overflow, THEN request that DSC personnel pump the DF floor drain sump prior to beginning decontamination operations.
- [8] Ensure that the two-man policy is observed while decontamination activities are conducted.
- [9] Ensure that items from different work areas are decontaminated separately.
- [10] Steam clean all surfaces within the curtained portion of the DF, including the DF screens, after each use.
- [11] Open and tie down the curtains.

#### 8.3 Decontamination Operations at the DF (continued)

DSC Decon Facility Personnel and DFU (continued)

#### WARNING

Failure to go through the boot bath when exiting the concrete pad area could result in the release of contaminants into the surrounding area.

- [12] Exit the decon pad through the boot bath.
- [13] Return the stands and equipment to the specified areas.
- [14] Remove PPE and handle in accordance with 5-21000-OPS-FO.6, as appropriate.
- [15] IF the reading is above the limit,
  THEN inform the DFU HSS to perform a Post Decontamination Survey.
- [16] Document the following information in the Activities log book:
  - Name of person performing decontamination activity
  - Company name (subcontractors and drillers)
  - Location to include OU and IHSS where equipment was used
  - Gallons of water used (decon, purge)
  - Date and time equipment was decontaminated
  - Level of PPE

#### WARNING

Failure to use proper procedures and equipment in accordance with the DF HASP while decontaminating equipment at elevated heights may result in injury caused by falls.

[17] Notify DSC and DFU HSSs when required to climb on equipment.

The above equipment includes, but is not limited to, trailers, drill rigs, and ladders.

#### 9. RECORDS

Management of all records is consistent with 1-77000-RM-001, Records Management Guidance for Records Sources.

#### **DSC Site Manager**

- [1] Ensure that the original and one copy of the following quality-related records, as appropriate, are transmitted to the ERPD Project File Center in accordance with 2-G18-ER-ADM-17.01, Records Capture and Transmittal:
  - Form FO.04-A3, Equipment Decontamination/Wash Checklist and Record
  - Form EMRG 1.1B, Contamination Survey Form
  - Activities log book

Submission of record copies to the ERPD Project File Center satisfies Administrative Record requirements, as defined in 3-21000-ADM-17.02, Administrative Records Screening and Processing.

There are no nonquality records generated by this procedure.

#### 10. REFERENCES

Health and Safety Practices Manual

RFP/EP-SAF-93-DCON, Decontamination Facility, Health & Safety Plan (DF HASP)

RFP-ER-MP-QAPD, RFP Environmental Restoration Management Quality Assurance Program Description, Section 5.0, Work Processes

Rocky Flats Interagency Agreement, 01/22/91

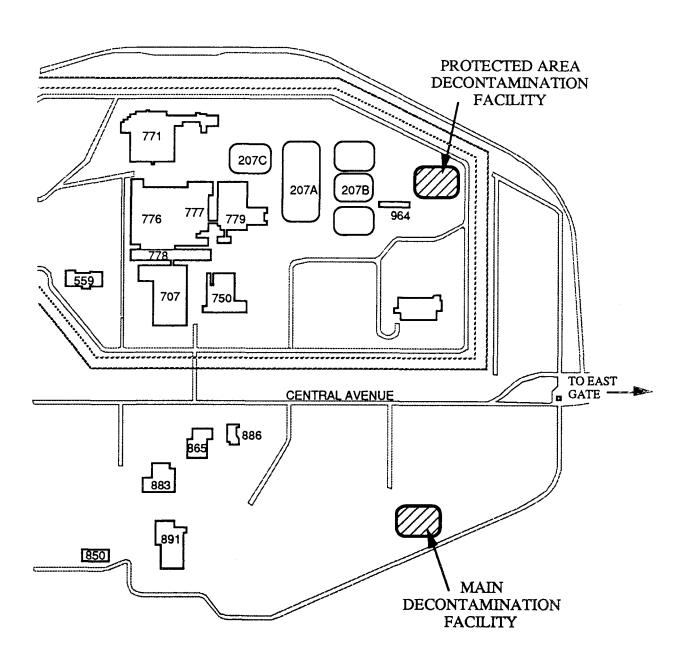
- 1-10000-HWR, RFP Hazardous Waste Requirements Manual
- 1-77000-RM-001, Records Management Guidance for Records Sources
- 2-G18-ER-ADM-17.01, Records Capture and Transmittal
- 3-21000-ADM-17.02, Administrative Records Screening and Processing
- 3-21000-OPS-EMRG-1.1, Gamma Radiation Surveys
- 4-B96-ER-OPS-EMRG-03.02, Survey Requirements for Conditional and Unrestricted Use
- 4-S01-ENV-OPS-FO.03, Field Decontamination Operations
- 5-21000-OPS-FO.6, Handling of Personal Protective Equipment
- 5-21000-OPS-FO.1, Air Monitoring and Dust Control

## 10. REFERENCES (continued)

- 5-21000-OPS-FO.7, Handling of Decontamination Water and Wash Water
- 5-21000-OPS-FO.8, Handling of Drilling Fluids and Cuttings
- 5-21000-OPS-FO.10, Receiving, Labeling, and Handling Environmental Materials Containers
- 5-21000-OPS-FO.12, Decontamination Facility Operations
- 5-21000-OPS-FO.15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)
- 5-21000-OPS-FO.16, Field Radiological Measurements

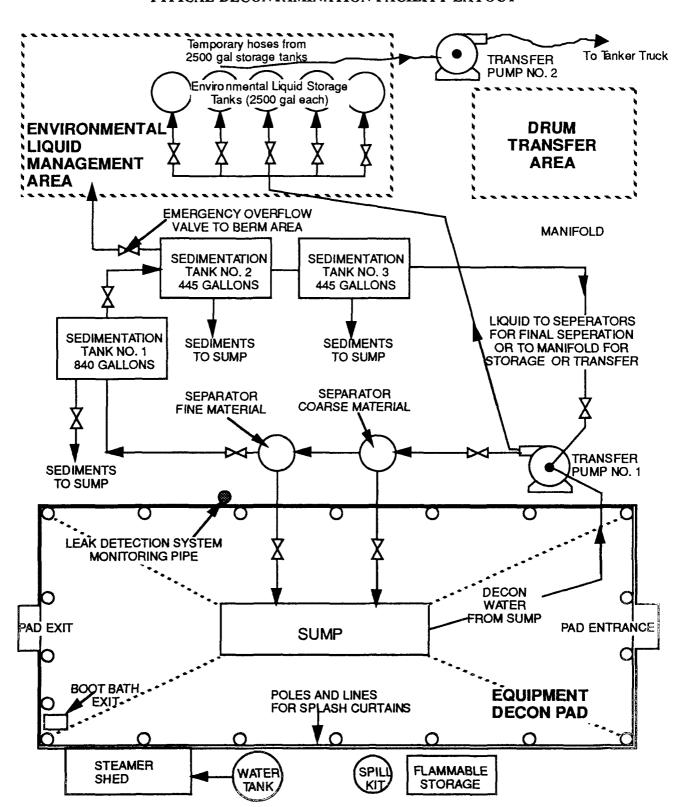
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## **DECONTAMINATION FACILITY LOCATIONS**



## APPENDIX 2 Page 1 of 1

#### TYPICAL DECONTAMINATION FACILITY LAYOUT



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## FORM FO.04-A3, EQUIPMENT DECONTAMINATION/WASH CHECKLIST AND RECORD

	Rocky Flats Environmental Technology Site VIRONMENTAL MANAGEMENT DEPARTMENT	EQUIPMENT DECONTAMINATION/WASH CHECKLIST AND RECORD	Form FO.04-A3 REVISION 2 Page 1 of 3
I.	General Information completed by:		
	Nam	e	Date
	Subco	ontractor's Name	
	Vehicle Manufacturer, Model and Common Na	ame:	
	Equipment Owner:		
	Name and Phone Number of Person Responsib	ole for the Equipment:	
	Serial Number/Vehicle Identification Number	(VIN):	
	Delivered to Decontamination Station By:	7	
	Initial contaminate characterization of work a	reas (check one)	
	Not potentially contaminated		
	Potentially contaminated		
	-		
	Equipment delivered to Main Decontamination	n Facility on a trailer due to VOC or radiologica	d contamination.
	☐ Yes ☐ No	Mar	
	Were areas found to be contaminated dovered	with plastic sheeting taped in-place prior to move	ram ant?
	Yes No No content	ning present	vement:
		minutes process	
П.	Exposure History completed by		
	Name		Date
	Subcontra	actor's Name	
	Where was equipment used?		
	What was equipment used for?		
	Did verified environmental monitoring indicat	te the presence of contamination?    Yes	□ No
	Name of person who accomplished environment	_	
	<u></u>		\
	Name Date	Phone No. Employer's	Name
	Results of Radiological monitoring of equipm	nent after final contamination reduction in the fi	eld.
	☐ None detected		
	☐ Less than 250 cpm - Specify measure	ed cpm	
	☐ Greater than 250 cpm - Specify meas	_	
	If areas of measurable alpha sodiation was for	and clearly identify these areas by assuiding the	
	_	und, clearly identify those areas by providing bo	•
	major components of the equipment being de	e area and include a sketch of the area showing	us location in relation to
	major combonents or me edinbuteur being de	comannaucu,	

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Rocky Flats
Environmental Technology Site
ENVIRONMENTAL MANAGEMENT
DEPARTMENT

EQUIPMENT DECONTAMINATION/WASH CHECKLIST AND RECORD Form FO.04-A3 REVISION 2 Page 2 of 3

	DE	PARTMENT	CHECKLIST AND RECORD	Page 2 01 3
	Results of	VOC monitoring after fina	l contamination reduction in the field.	
		VOCs at background leve	els	
		VOCs greater than backg		
m.	Actions At	Main Decontamination Fa	acility	
	NOTE: Se	ctions III and V are comple	eted by the person conducting the decon procedure.	
	Yes N	0		
			s washed under the provisions of Subsection 8.	
		Personnel Deconta	mination Station established as described in the appl	icable site-specific health
		and safety plan.		
			equipment (PPE) selected based upon results of radio utilized:   Level B  Level C  Level D	ological monitoring.
		Specify PPE level to PPE inspected prior		
			cked prior to using pressurized spray (circle the direct	ion the wind was blowing
		from).		•
		N NE E SE S S	_	
			nt inspected and decontaminated as required.	0
		Were decontaminal	tion and rinse operations started at the uppermost surfantion devoted to areas such as tires that contacted a p	aces?
			as identified as having a measurable level of alpha radi	
		Was personal deco	ntamination completed as described in the applicable	site-specific health and
	<del></del>	safety plan?	~ W///	
		Was gross contami	nation removed before entering DF area?	
		1	10/11/2	
77.7	ъ .		G Contamination	
14.	Equipment	Monitoring to Verify Ren	to an or Contamination	
	Name of Ra	diological Engineering	proved contractor Health and Safety Specialist conduc	ting smear test as
			Surface Contamination Surveys:	
			1	
	Name		Date	
	Results of s			
	Name of pe	rson conducting VOC mor	nitoring:	
			/	
	Name		Date	
	•			
	Results of V	OC monitoring:		

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VIRONM	Rocky Flats nental Technology Site IENTAL MANAGEMENT EPARTMENT	EQUIPMENT DECONTAMINATION/WASH CHECKLIST AND RECORD	Form FO.04-A. REVISION 2 Page 3 of 3
NOTE:	This section is completed by the	person conducting the decon procedure.	
Follow-u	p Decontamination		
	Not required Required for the following area/sur	faces	
<del></del>			
			· · · · · · · · · · · · · · · · · · ·
Results of	follow-up smear test;		
	Decontamination completed	Site Construction Manager notified	
	Decontamination completed		